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1     **ABSTRACT**

2             A handle administration system is described in which software agents  
3 receive handles to various resources that they can use to obtain the resources. The  
4 described embodiments provide multiple states that can be assumed by the  
5 handles. An unassigned state is provided in which handles are not assigned to a  
6 particular resource, nor can they be dereferenced to obtain pointers to any  
7 resources. An assigned state is provided in which handles are assigned to a  
8 particular resource and can be dereferenced to obtain a pointer to the resource. A  
9 suspended state is provided in which the handles are assigned to a particular  
10 resource but cannot be dereferenced to obtain a pointer to that resource.  
11 Advantageously, a suspended handle can be reinstated to assume the assigned  
12 state. In one embodiment, the handle system is implemented by incorporating a  
13 suitable field in a handle database that is used to indicate that a handle is  
14 suspended. In another embodiment, no additional fields are necessary. Rather,  
15 handle values in the handle database are manipulated to indicate that a handle has  
16 been suspended. These manipulations can be easily undone to reinstate a handle.  
17 In the described embodiment, a three state handle system can be advantageously  
18 employed to implement a two-phase commit operation.  
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